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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/777,405	02/12/2004	Seogchan Kang	P06605US00	5865
27407	7590	11/03/2006		
MCKEE, VOORHEES & SEASE, P.L.C. ATTN: PENNSYLVANIA STATE UNIVERSITY 801 GRAND AVENUE, SUITE 3200 DES MOINES, IA 50309-2721			EXAMINER VOGEL, NANCY S	
			ART UNIT	PAPER NUMBER
			1636	

DATE MAILED: 11/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/777,405

Applicant(s)

KANG ET AL.

Examiner

Nancy T. Vogel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-65 is/are pending in the application.
- 4a) Of the above claim(s) 16-65 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 2/12/04.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

Claims 1-65 are pending in the case.

Receipt of the Information Disclosure Statement on 2/12/04 is acknowledged.

### ***Election/Restrictions***

Applicant's election of Group I, claims 1-15 in the reply filed on 8/28/06 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 16-65 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 8/28/06.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 5, 6, 7, 8, 9, 10, 11, 15? are rejected under 35 U.S.C. 102(b) as being anticipated by Capecchi et al. (US 5,464,764) (cited by applicants).

Capecchi et al. disclose a method of identifying and selecting transformants comprising transforming a host cell with Agrobacterium comprising a vector containing a targeting construct comprising a first polynucleotide sequence encoding a negative

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selection marker linked to a fragment of DNA flanked by DNA sequences homologous to a polynucleotide to be targeted, wherein said DNA fragment is disrupted by a positive selection marker, and selecting transformants by subjecting a transformed host cell to a positive and a negative selection agent (see abstract, Fig. 1, col. 15 lines 42-58, col. 18, lines 41-61). The transformants resulting from knockout lack the negative selection marker, while ectopic, heterologous or illegitimate transformants express both a negative and a positive selection marker (see col. 5 lines 20-30). The negative selection marker confers susceptibility to an agent and may be the HSVtk gene or a bacterial endotoxin gene, while the positive selection maker may confer resistance to an antibiotic such as neomycin, hygromycin, bleomycin (see Table I). The *Agrobacterium tumefaciens* may be used (see col. 18 lines 41-61). The reference discloses that the vectors may be used to transform fungi (col. 15 lines 42-52).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Capecchi et al. in view of de Groot et al. (Nature Biotechnology Vol. 16 pp. 839-842, 1998), Grosjean-Courneyer et al. (US Patent 6,617,163).

Capecchi et al. is cited for the reasons set forth above.

The difference between the reference and the instant claims is that transformation of fungal cells, and in particular such filamentous fungi as *Aspergillus fumigatus*, *Botrytis cineria*, *Magnaporthe grisea* and *Fusarium oxysporum*, using *Agrobacterium* is not disclosed.

However, de Groot et al. disclose that any filamentous fungi may be transformed using *Agrobacterium tumefaciens* (see abstract, see Table 2, see page 841, second column). De Groot et al. use a wide variety of filamentous fungi, including *Aspergillus*, *Fusarium*, and *Neurospora* species (Table 2). The reference discloses that the *Agrobacterium tumefaciens* transformation technique may be used with any filamentous fungi in addition to plant cells and such yeast as *S. cerevisiae* (abstract, page 839 cols. 1-2). Grosjean-Courneyer et al. disclose transformation, including transformation using *Agrobacterium tumefaciens* of a wide variety of fungi including *Magnaporthe grisea*, *Aspergillus fumigatus*, *Botrytis cineria*, and all *Fusarium* species (see col. 6 line 45 – col. 7 line 9).

It would have been obvious to one of ordinary skill in the art to have used the positive/negative transformation method disclosed by Capecchi et al. and the Agrobacterium transformation method applied to fungi, including such well known strains as *Aspergillus fumigatus*, *Botrytis cineria*, *Magnaporthe grisea* and *Fusarium oxysporum* since de Groot et al. discloses that all filamentous fungi may be transformed using the *Agrobacterium tumefaciens* bacteria technique and since the art including Grosjean-Crouneyer et al. disclose that numerous filamentous fungi may be transformed with recombinant DNA techniques, and all of the above references are concerned with the transformation of fungi of interest using recombinant methods. One would have been motivated to do so by the desire to obtain the disclosed advantages of the positive/negative transformation technique of Capecchi et al., which include the ability to select against illegitimate (non-homologous) insertion of recombinant DNA into the genome of fungi of interest, and to obtain the well known advantages of the technique of *Agrobacterium tumefaciens* transformation which are disclosed in de Groot as being applicable to all fungi. Based upon the teachings of the cited references, the high skill of one of ordinary skill in the art, and absent evidence to the contrary, there would have been a reasonable expectation of success to result in the claimed invention.

### ***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nancy T. Vogel whose telephone number is (571) 272-0780. The examiner can normally be reached on 6:30 - 3:00, Monday - Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Irem Yucel, Ph.D. can be reached on (571) 272-0781. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

10/26/06

  
NANCY VOGEL  
PRIMARY EXAMINER